NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE

Single Technology Appraisal

Eribulin for the treatment of locally advanced or metastatic breast cancer

Final Scope

Remit/appraisal objective

To appraise the clinical and cost effectiveness of eribulin within its licensed indication for the treatment of people with breast cancer who have received two or more chemotherapy regimens for locally advanced or metastatic disease.

Background

Breast cancer is the most common malignancy affecting women in the UK accounting for 1 in 3 of all cancers in women. Over 40,000 women and almost 300 men were newly diagnosed with breast cancer in England and Wales during 2007. Furthermore, over 12,000 deaths due to breast cancer occurred in the UK in 2007, with an average rate of 38.6 deaths per 100,000 women and 0.2 deaths per 100 000 men. Approximately 5% of women presenting with breast cancer have advanced disease with distant metastases (where cancer cells have spread to other parts of the body), and it is estimated that around 35% of those presenting with early or localised breast cancer will eventually develop metastatic breast cancer.

The role of current treatments for advanced and metastatic breast cancer is to palliate symptoms, prolong survival and maintain a good quality of life with minimal adverse events. The NICE clinical guideline for advanced breast cancer (CG81) recommends first-line treatment with an anthracycline-based chemotherapy regimen. Where an anthracycline is unsuitable (for example if the person has previously received anthracycline-based adjuvant therapy or has a contraindication to anthracyclines), or where the disease relapses following an anthracycline-based regimen, the clinical guideline recommends docetaxel monotherapy. The guideline states that combination chemotherapy may be considered to treat patients with advanced breast cancer for whom a greater probability of response is important and who understand and are likely to tolerate the additional toxicity. NICE technology appraisal guidance No. 116 recommends gemcitabine in combination with paclitaxel, within its licensed indication, for the treatment of metastatic breast cancer that has relapsed following adjuvant/neoadjuvant chemotherapy, only when docetaxel monotherapy or docetaxel plus capecitabine are also considered appropriate. Vinorelbine or capecitabine should be considered for subsequent lines of therapy. Gemcitabine monotherapy is also used in clinical practice in the UK.

The technology

Eribulin (E7389, Eisai) is a synthetic analogue of halichondrin.B, which inhibits tubulin polymerisation. The destabilisation of tubulin polymers disrupts the assembly and formation of microtubules, which in turn arrests cancer cell division. Eribulin is administered intravenously.

Eribulin does not currently have a UK marketing authorisation for the treatment of locally advanced or metastatic breast cancer. It has been studied in clinical trials as monotherapy for the treatment of women with locally advanced or metastatic breast cancer whose disease has relapsed after at least two chemotherapy treatments (which must have included an anthracycline and a taxane). In one study eribulin has been compared with capecitabine and in another with a 'treatment of physician's choice'. Eribulin has also been studied in a non-randomised trial after the failure of an anthracycline, a taxane and capecitabine.

Intervention(s)	Eribulin monotherapy
Population(s)	People with breast cancer who have received two or more chemotherapy regimens for locally advanced or metastatic disease and whose disease has progressed.
Comparators	• vinorelbine • capecitabine • gemcitabine
Outcomes	The outcome measures to be considered include: • overall survival • progression-free survival • response rate • adverse effects of treatment • health-related quality of life
Economic analysis	The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year. The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared. Costs will be considered from an NHS and Personal Social Services perspective.

Other considerations	Guidance will only be issued in accordance with the marketing authorisation.
Related NICE recommendations	Related Technology Appraisals: Technology Appraisal No. 116, Jan 2007, 'Gemcitabine for the treatment of metastatic breast cancer'.Transferred to static list May 2010. Technology Appraisal No.62, May 2003, 'Guidance on the use of capecitabine for the treatment of locally advanced or metastatic breast cancer '. Updated in clinical guideline 81. Technology Appraisal No.54, December 2002, 'Guidance on the use of vinorelbine for the treatment of advanced breast cancer '. Updated in clinical guideline 81. Technology Appraisal No. 34, Mar 2002, 'Guidance on the use of trastuzumab for the treatment of advanced breast cancer'. Currently subject to review. Publication date tbc. Technology Appraisal No. 30, September 2001, 'Taxanes for the treatment of breast cancer'. Updated in clinical guideline 81. Technology Appraisal in Preparation, 'Lapatinib for breast cancer (for use in women with previously treated advanced or metastatic breast cancer)'. Publication date tbc. Technology Appraisal in Preparation, 'Sunitinib in combination with capecitabine for the treatment of advanced and/or metastatic breast cancer'. Publication date tbc. Related Clinical Guidelines Clinical Guideline No. 81, Feb 2009, 'Advanced breast cancer: diagnosis and treatment'. This guideline updates and replaces technology appraisal guidance 62 (capecitabine), 54 (vinorelbine) and 30 (taxanes). Clinical Guideline No. 80, Feb 2009, 'Breast cancer (early and locally advanced): diagnosis and treatment'.